

INTRODUCTION

The Transportation Planning Branch is responsible for working with outside planning agencies in providing engineering and planning assistance for the current, proposed, and potential highway network in North Carolina. This branch is charged with identifying future highway needs through the transportation planning process. This process requires the use of modeling and forecasting techniques to determine potential needs and opportunities in the transportation system. Accurate travel demand modeling requires appropriate values for roadway capacities and service volumes at various levels of service (LOS).

Tools such as the 2000 Highway Capacity Manual (HCM) are very valuable for performing detailed analyses of facilities and corridors given a series of input data. However, the paucity of information typically available at the planning stages coupled with the relative complexity of the HCM product make direct use of the HCM impractical or inefficient for forecasting applications. The HCM is primarily designed for operational analyses; it is not particularly well suited to the reverse process of determining acceptable roadway demands for various maximum service volumes or capacities at LOS thresholds.

The Transportation Planning Branch does not currently possess a consistent method for determining expected service volumes and capacities for a given set of roadway, geographic, traffic, or other characteristics. Current methods use only a few variables and are not consistent across the State. The Florida Department of Transportation (FDOT) has developed a means to anticipate these critical planning values. The FDOT computer software provides users with LOS standards and methodologies. This project proposes to develop a similar user-friendly computer program that will provide users with accurate, consistent expected hourly service volumes and expected daily traffic for various facilities, tailored to North Carolina conditions. The product will allow for appropriate variation among geographic, terrain, traffic, and other differences that may affect facility performance apart from roadway characteristics.